



May 25, 2006

Ms. Patricia J. Polston
Waste, Pesticides and Toxics Division
U.S. EPA Region 5
77 W. Jackson Blvd., DRE-9J
Chicago, IL 60604-3590

Re: CMP Investigation Work Plan
Performance-Based RCRA Corrective Action
Former Delphi Harrison Thermal Systems
USEPA ID No. OHD 017 958 604

Dear Ms. Polston:

Please find the attached three (3) copies of the proposed CMP Investigation Work Plan for the Former Delphi Harrison Thermal Systems Site located at 300 Taylor Street, Dayton, Ohio. The CMP Investigation Work Plan will be conducted by Haley & Aldrich, Inc. on behalf of the General Motors Corporation (GM) and in accordance with the Performance-Based Corrective Action Agreement for the site. The field work for the CMP Investigation Work Plan will start on May 30, 2006.

Please call (937) 455-2636 if you have any questions concerning this information.

Sincerely,

A handwritten signature in cursive script, reading "Pamela L. Barnett".

Pamela L. Barnett, P.G.
Project Manager
BOW Environmental Solutions, Inc. on behalf of GM

attachment.

c.c.: Jean Caufield, GM Remediation
Pamela Hull, OEPA
Carl Bridges, Peerless
Gwen Eberly/Chris Lipson, City of Dayton



**CONESTOGA-ROVERS
& ASSOCIATES**

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www.CRAworld.com

MEMORANDUM

TO: Pam Barnett REF. NO.: 79032-345/pw/46

FROM: Christine Horch/Sylvie Eastman DATE: May 24, 2006

C.C.: Jean Caufield, Terry Conway, Rich Kapuscinski, Chuck
Kronbach, Jim Little, Ian Richardson, Laura Romeo, Steve
Song

RE: **CMP Investigation Work Plan**
Former Delphi Harrison Thermal Systems Facility - Dayton, Ohio

1.0 INTRODUCTION

In support of evaluating potential corrective measures at the Former Delphi Harrison Thermal Systems Facility in Dayton, Ohio (Site), Conestoga-Rovers & Associates (CRA) and Haley & Aldrich (H&A) have prepared this Work Plan to define investigative work to be completed to support an evaluation and potential implementation of corrective measures for the Site. The work plan includes the following six components:

- the installation of four test borings to a maximum depth of approximately 100 feet below ground surface (to the deepest confining unit in the till rich zone, if feasible, or to a shallower depth, if drilling refusal occurs or potentially significant soil contamination is encountered, as a result of soil screening);
- the potential installation of one 2-inch till-rich zone monitoring well;
- the installation of one 2-inch lower aquifer monitoring well;
- groundwater sampling for volatile organic compounds (VOCs);
- gamma logging of selected off-site wells; and
- lower aquifer water level monitoring.

The following sections will describe each of the components of the anticipated work, separately, including general activities and rationale.

2.0 PROPOSED TEST BORING INSTALLATIONS

The objectives of the test borings are to investigate potential VOC impact in off-Site locations in the vicinity of the Dayton Public Schools Career Academy Geothermal Wells and to further define off-Site soil stratigraphy. The proposed test boring locations are shown on Figure 1 attached to this memorandum. Actual drilling locations may vary due to site access and operational constraints, including presence of above ground structures and utilities and underground utilities.

2.1 TEST BORINGS - GEOPROBE

Four test borings are proposed to be installed to aid in further defining off-Site soil stratigraphy to the base of the till-rich zone and to investigate off-Site VOCs in soils above, and within, the till-rich zone at locations near the Dayton Public Schools Career Academy Geothermal Wells. Based on previous investigations off-Site, the confining unit separating the till-rich zone from the lower aquifer occurs at approximately 100 ft bgs or 650 ft AMSL. Soil exploration will terminate after this confining unit is identified by visual examination of soil cores or at a shallower depth, if drilling refusal occurs, or soil screening thresholds are exceeded. Soil cores will be visually examined in the field and boring logs will be prepared. Soil stratigraphy and screening data identified by the test borings will be used to plan the construction of a new monitoring well in the lower aquifer as described in Section 4.0.

VOC screening during drilling will consist of the following activities:

- Photoionization Detection (PID) and Sudan IV "Oil-in-Soil" screening methods will be employed to screen for VOCs in soil. If soil screening above the water table indicates potential presence of VOCs (PID reading of 200 ppm or greater or a positive result of Oil-in-Soil test kit in soil), soil samples above the water table will be collected for TCL VOC analysis. In the event that soil screening results at a specific location requires soil samples, the test boring at that location will cease and the borehole will be abandoned. If the borehole is abandoned, the need for additional borings using Geoprobe or alternate drilling methods (e.g. Rotosonic) will be evaluated based on the entire investigation program.
- PID and Sudan IV "Oil-in-Soil" screening methods will be employed to screen for VOCs in soil below the water table. If the PID and/or Oil-in-Soil screening indicates the potential for elevated VOCs while drilling below the water table, borehole groundwater samples may also be collected for TCL VOC analysis. If positive result of Oil-in-Soil test kits indicates potential presence of VOCs, the test boring at that location will cease and the borehole will be abandoned. If the borehole is abandoned, the need for additional borings using Geoprobe or alternate drilling methods (e.g. Rotosonic) will be evaluated based on the investigation event as a whole.
- Independent of PID and "Oil-in-Soil" field screening thresholds, borehole groundwater samples will be collected from discrete saturated soils separated by confining units as identified by visual examination of cores when drilling. Approximately one borehole sample will be collected from water-bearing units five or more feet thick. In the likely event that more than one confining unit is encountered at depth, more than one borehole groundwater sample may be collected at a given location.
- The borehole groundwater samples collected from the borehole will be used for screening purposes only. Due to the need to evaluate VOC conditions during the drilling program, borehole groundwater samples will be submitted for VOC analysis under expedited (24-hr) turnaround. Results of these analyses will enable consideration of additional drilling precautions (e.g. multiple casings), if necessary, when drilling through confining units to install the proposed new lower aquifer monitoring well (see Section 4.0).
- Following installation, test borings will be abandoned using a grout/bentonite mixture.

2.2 TEST BORINGS - ROTOSONIC

If the test borings can not be installed using a Geoprobe rig, as a result of drilling refusal, then Rotosonic drilling methods will be used to attain required depths. Soil and groundwater screening methods as described in section 2.1 will be utilized.

3.0 TILL-RICH ZONE MONITORING WELL INSTALLATION

If screening indicates the potential presence of VOCs in the till-rich zone at one or more of the proposed boring locations, then a single monitoring well will be installed at the location with the greatest VOC impacts in soil. The objective of the new well is to facilitate sampling of groundwater (for lab analysis of VOC concentrations) and water-level monitoring in the till rich zone in the vicinity of the active Geothermal Well, which may contribute to a better understanding of sources of VOC impacts to groundwater in the lower aquifer in this off-site area that are likely unrelated to the Site.

The proposed monitoring well will be constructed consistent with existing till-rich zone wells, 2-inch diameter, 10-foot length PVC screen (No. 10 slot size). The well will be installed using Rotosonic drilling techniques and may be permanently cased, if necessary, to minimize the potential for drag-down of contaminants to till-rich zone.

4.0 LOWER AQUIFER MONITORING WELL INSTALLATION

Following the test boring investigation, one lower aquifer monitoring well will be installed to investigate water quality in the lower aquifer. The objective of the new well is to facilitate sampling of groundwater (for lab analysis of VOC concentrations) and water-level monitoring in the lower aquifer in the vicinity of the Geothermal Well. The location and installation methods for the new well are intended to avoid drawing-down VOC contamination from shallow or till-rich zone soils, if encountered. VOC concentrations in groundwater samples from the new well and from the Geothermal Wells will be compared. If VOC concentrations in groundwater from the Geothermal Wells are significantly higher than in the new well, then it may be possible to conclude that the VOC contamination historically evidenced by groundwater sampling results for the existing geothermal wells is not site-related.

The new monitoring well will be located in the vicinity of one of the four test borings nearest to the existing Dayton Public Schools Career Academy Geothermal Wells. The well will be placed in the location nearest to the existing geothermal well but not in an area with significant shallow VOC impacts, as determined by soil screening and sampling results. Avoiding locations with significant VOC impacts to soil will minimize the potential of dragging down VOCs from the upper aquifer or till-rich zone into the lower aquifer.

The proposed monitoring well will be constructed consistent with existing lower aquifer wells, 2-inch diameter, 10-foot length PVC screen (No. 10 slot size) to approximately 160-feet below ground surface. The well will be installed using double-cased sonic drilling techniques, permanent steel casing driven into a competent clay unit, in order to minimize the potential for drag-down of contaminants to lower aquifer.

Photoionization Detection (PID) and Sudan IV "Oil-in-Soil" screening methods will be employed to screen for contaminants, as described in Section 2.1 herein. Sieve/grain size analysis will be conducted through lower aquifer strata to support the design of a new (replacement) geothermal well, if warranted.

5.0 GROUNDWATER SAMPLING

A groundwater sample will be collected from the newly installed lower aquifer monitoring well for laboratory analysis of VOCs. The project-specific groundwater sampling and analysis procedures, including QA/QC protocols, will be employed for this task.

In addition, following installation and sampling of the proposed lower aquifer monitoring well, a low-flow groundwater sample from the existing former geothermal well will be collected for laboratory analysis of VOCs.

6.0 GAMMA LOGGING

Gamma logging will be employed in two existing lower aquifer wells and one till-rich zone well to fingerprint natural gamma activity and soil stratigraphy in the vicinity of the Dayton Public Schools Career Academy Geothermal Wells.

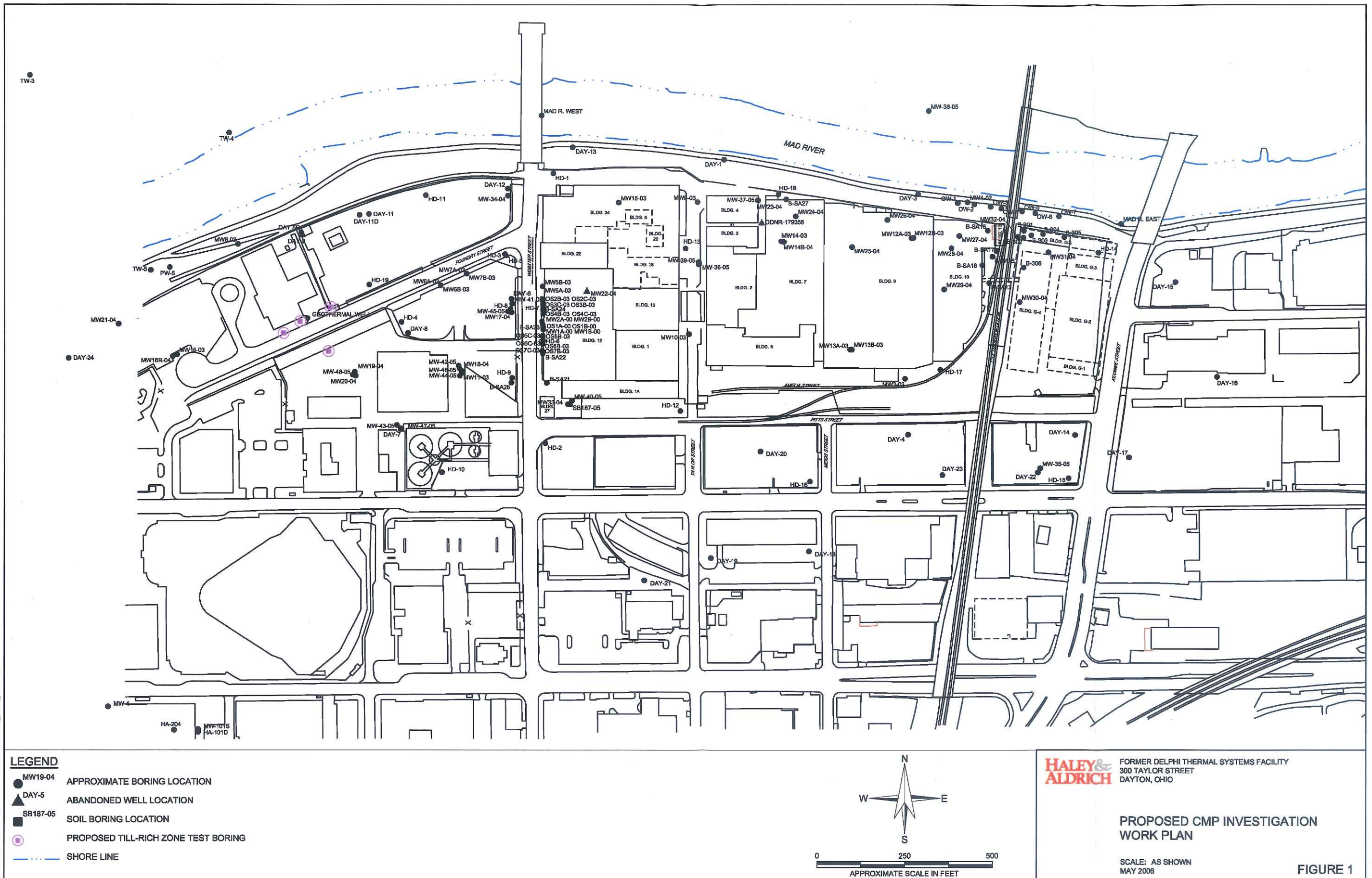
7.0 WATER LEVEL MONITORING

In addition to the proposed EI groundwater monitoring plan, a round of lower aquifer water level monitoring is proposed to accompany the installation, development and sampling proposed herein. The water level monitoring round will include both existing lower aquifer wells and the new proposed monitoring well in the lower aquifer.

8.0 SCHEDULE

Based on acceptance of the methods and locations outlined in this work plan, drilling could commence as early as Tuesday, May 30, 2006. Drilling may take up to three weeks, after which the well will be developed and as per GM SOPs, sampling will take approximately 24 hours following well development (estimated June 19 to June 21, 2006).

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January 30, 2006

Ms. Patricia J. Polston
Waste, Pesticides and Toxics Division
U.S. EPA Region 5
77 W. Jackson Blvd., DRE-9J
Chicago, IL 60604-3590

Re: EI Hydrogeology Field Investigation Work Plan
Performance-Based RCRA Corrective Action
Former Delphi Harrison Thermal Systems
USEPA ID No. OHD 017 958 604

Dear Ms. Polston:

Please find the attached three (3) copies of the EI Hydrogeology Field Investigation Work Plan for the Former Delphi Harrison Thermal Systems Site located at 300 Taylor Street, Dayton, Ohio. This field event will be conducted by Haley & Aldrich, Inc. on behalf of the General Motors Corporation (GM) and in accordance with the Performance-Based Corrective Action Agreement for the site.

Please call (937) 455-2636 if you have any questions concerning this information.

Sincerely,

A handwritten signature in cursive script, reading "Pamela L. Barnett".

Pamela L. Barnett, P.G.

Project Manager

BOW Environmental Solutions, Inc. on behalf of GM

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c.c.: Jean Caufield, GM Remediation
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MEMORANDUM

TO: Pam Barnett REF. NO.: 12638-04-0000/pw/44

FROM: Christine Horch(H&A)/Jessica Rocca (CRA) DATE: January 30, 2006

C.C.: Jean Caufield, Chuck Kronbach, Laura Romeo, Terry
Conway, Rich Kapuscinski, Steve Song, Sylvie Eastman, Ian
Richardson, James Little

RE: EI Hydrogeology Field Investigation Work Plan
Former Delphi Harrison Thermal Systems Facility - Dayton, Ohio

1.0 INTRODUCTION

Haley & Aldrich (H&A) and Conestoga-Rovers & Associates (CRA) have prepared this Work Plan to describe work to be completed at the Site to further investigate groundwater flow in the vicinity of the Mad River and specifically to answer comments from US EPA regarding the potential for groundwater to flow under the Mad River. Specifically, this work plan describes installation of two additional monitoring on the north side of the Mad River at locations that have been discussed with and accepted by US EPA. The additional wells will be used for measuring groundwater elevations to support a determination of whether groundwater from the Upper Aquifer water-bearing unit flows under the Mad River. This work will further support the Site hydrogeologic conceptual model, which will be reported in the RFI and is a foundation for the CA 750 Environmental Indicator determination of groundwater migration under control.

The work plan includes the following three components:

- the installation of two top of till monitoring wells north of the Mad River;
- well development of the two new monitoring wells; and
- site wide water level monitoring in the Upper Aquifer and the Mad River.

The following sections will describe each of the components of the anticipated work, separately, including general activities and rationale. The approximate locations and screen intervals of the proposed monitoring wells are shown on Figure 1.

2.0 PROPOSED MONITORING WELL INSTALLATIONS

Each of the proposed monitoring well locations are shown on Figure 1 attached to this memorandum. These proposed monitoring well locations may be modified as necessary to accommodate field conditions such as utility locations and access problems. VOC screening during drilling will consist of photoionization detection (PID) monitoring and Sudan IV "Oil-in-Soil" test kits. No soil samples will be collected for chemical analysis from the vadose zone unless unusual screening results are obtained.

2.1 UPPER AQUIFER/TOP OF TILL MONITORING WELLS

Two monitoring wells completed in the Upper Aquifer at the top of till interface are proposed at locations that were selected to coincide with existing monitoring wells south of the river including DAY-13 and DAY-11/DAY-11D. These wells are proposed to investigate top of till groundwater elevation as compared to the Mad River surface water elevation and to assist in characterizing the geological stratigraphy across the river.

The construction details of the proposed Upper Aquifer/top of till monitoring wells will be consistent with other existing Upper Aquifer/top of till monitoring wells at the Site. A 2-inch diameter PVC screen (No. 10 slot size), 10-feet in length, will be set above the top of till with a 1-2 ft. sump into the till. In addition, due to the lack of vertical relief and proximity of the locations to the Mad River, water-tight, flush-mount vault surface completions will be installed.

Due to the remote location and limited access, these wells will be installed with a track-mounted hollow-stem auger drill rig.

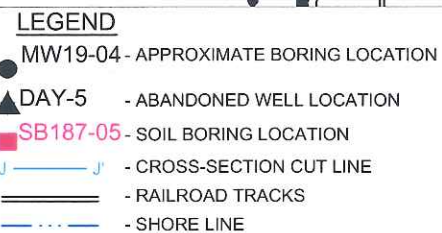
3.0 WATER LEVEL MONITORING

An additional site-wide round of Upper Aquifer groundwater level monitoring is proposed following installation and development of wells proposed herein. The water level monitoring round will include investigations of both the existing and proposed Upper Aquifer monitoring wells.







Surface water level measurements will be also collected from the Mad River at set locations, in order to evaluate correlation between surface water levels and groundwater elevations.

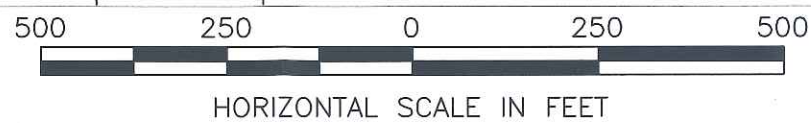
4.0 SCHEDULE

If the methods and locations outlined in this work plan are consistent with our discussion earlier this week, drilling could commence on Tuesday January 31, 2006. Drilling may take up to 2 weeks depending on access and weather considerations, after which the wells will be developed and groundwater/surface water level monitoring will take place (estimated the week of February 13, 2006). The data should be available for discussion with the USEPA in early March 2006.



WELL SCREEN LOCATION LEGEND

	DAY-1	UPPER AQUIFER - WATER TABLE
	DAY-11	UPPER AQUIFER - OTHER - INTERMEDIATE
	HD-1	UPPER AQUIFER - ABOVE TOP OF TILL
	MW19-04	TILL ZONE
	MW18-04	LOWER AQUIFER
	MW-50-06	PROPOSED UPPER AQUIFER - ABOVE TOP OF TILL



DRAFT



FORMER DELPHI THERMAL SYSTEMS FACILITY
300 TAYLOR STREET
DAYTON, OHIO

SITE PLAN WITH WELL LOCATIONS
AND PROPOSED EI WELL LOCATIONS

SCALE: AS SHOWN

JANUARY 24, 2006

FIGURE 1